

REMARKS

In the Official Action mailed 06 October 2008, the Examiner reviewed claims 1-15 and 31-35. The Examiner has objected to claims 1-2, 6, and 31 for informalities; has rejected claims 1-2, 8 and 31 under 35 U.S.C. §102(b); has rejected claim 13 under 35 U.S.C. §103(a); has rejected claims 3-5, 7 and 14 under 35 U.S.C. §103(a); has rejected claims 3-7 under 35 U.S.C. §103(a); has rejected claims 9, 12, 32 and 35 under 35 U.S.C. §103(a); has rejected claims 10 and 33 under 35 U.S.C. §103(a); has rejected claims 11 and 34 under 35 U.S.C. §103(a); and has rejected claim 15 under 35 U.S.C. §103(a).

Applicant has amended claims 1, 2, 6, 8, 10, 12, 13, 14, 31 and 35. Claims 1-15 and 31-35 remain pending.

Objection to Claims 1-2, 6, and 31

The Examiner has objected to claims 1-2, 6, and 31 for informalities.

Applicant has amended these claims as suggested by the Examiner. Applicant has also amended claims 8, 10 and 13 for consistent nomenclature.

Rejection of Claims 1-2, 8 and 31 under 35 U.S.C. §102(b)

Claims 1-2, 8 and 31 under 35 U.S.C. §102(b) as being anticipated by McArthur (US 4184476).

Rejection of Claim 13 under 35 U.S.C. §103(a)

Claims 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claim 1.

Rejection of Claims 3-5, 7 and 14 under 35 U.S.C. §103(a)

Claims 3-5, 7 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claim 1, in view of Gauvin (US 6130781).

Rejection of Claims 3-7 under 35 U.S.C. §103(a)

Claims 3-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claim 1, in view of Berman (US 4663085 as cited in the IDS).

Rejection of Claims 9, 12, 32 and 35 under 35 U.S.C. §103(a)

Claims 9, 12, 32 and 35 are rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claims 1 and 31, respectively, in view of Mori (US 6218609).

Rejection of Claims 10 and 33 under 35 U.S.C. §103(a)

Claims 10 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claim 8, in view of Berman and Samuelson (US 4692557).

Rejection of Claims 11 and 34 under 35 U.S.C. §103(a)

Claims 11 and 34 are rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claims 8 and 31, respectively, in view of Nath et al. (US 5,968,287 as cited in the IDS).

Rejection of Claim 15 under 35 U.S.C. §103(a)

Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over McArthur as applied to claim 1, in view of McDonough (US 6606823 as cited in the IDS).

The Cited Art

The **MacArthur** patent discloses a building 15 including a foundation 17 from which vertical columns 16 extend to partially form the sides of the building. Rafters 18 extend at an angle from the top of columns 16 to partially form the roof. Horizontal wall and roof purlins 20 are mounted to columns 16 and rafters 18 forming the basic framework for building 15. External wall and roof panels 22 are mounted on the wall and roof purlins 20 to form the building walls and roof. At selected positions along the typically south facing walls and roof, solar energy collectors 24 are used to replace wall and roof panels 22. Solar energy collectors 24 include a transparent exterior panel 28, an interior panel 50 and a thermal solar energy absorbing panel 30 therebetween. The panels 30, 50 and purlins 20 form a heated air passageway. As shown in figures 9 and 11, air from the interior of building 15 passes through an inlet grill 54, through the heated air passageway, through an air duct 55 and back into the room through a blower 56.

The Cited Art Distinguished

Independent claim 1 is not anticipated by McArthur for several reasons.

First, energy absorbing panels 30 are not electricity-generating photovoltaic (PV) panels, but rather are thermal solar collector panels designed to heat air as in the basic embodiment of figures 1, 4-7 and 9-11, or designed to heat water and optionally air as in the figures 8 and 12 embodiment.

Second, claim 1 has been amended to emphasize that it is an essentially wall-less shade system, not a building having walls as does McArthur. As stated in paragraph 25 of the application, "The subject invention constitutes a unique structure suitable for carports, pavilions, and other appropriate situations. The invention can be used at gathering places for education, music concerts, farmers' markets, shaded parking/walkways."

Third, claim 1 recites in part "a planar array of modular panels ... covering at least about 80% of the first area" There is nothing in McArthur that indicates that solar energy collectors 24, 26 are modular, nor is there any indication that external panels 22 of McArthur are modular. Further, it appears that solar energy collectors 26 are located only one side of the roof of building 15 and cover less than half of that side. Therefore, even if that were assumed, for sake of discussion, that solar energy collectors 26 are modular panels, which they are not, they still do not cover anywhere near 80% of the South-facing portion of the roof, much less the entire roof.

Independent claim 1 would not have been obvious over McArthur in view of the cited art because (1) there is nothing in the art suggesting that the structure of MacArthur would have been suitable for a photovoltaic installation, (2) there is nothing in McArthur that suggests modifying the enclosed building of MacArthur to create a wall-less shade system, (3) there is nothing in McArthur that suggests modifying the building to have the claimed percentage of modular panels, and (4) the invention provides a new function for wall-less shade structures by providing for energy generation together with the basic shading aspect through the use of modular panels to provide for maximum flexibility while minimizing cost.

Independent claim 31 is not anticipated by McArthur because energy absorbing panels 30 are not photovoltaic (PV) modules, but rather are thermal solar collector panels designed to

heat air as in the basic embodiment of figures 1, 4-7 and 9-11, or designed to heat water and optionally air as in the figures 8 and 12 embodiment.

In addition, claim 31 recites in part "a protective panel ... spaced apart from and covering substantially the entire lower surface of the PV module ... ". In contrast, interior panels 50 of McArthur are integral parts of the solar energy collectors 24. If one were to remove into interior panels 50, solar energy collectors 24 would no longer function as a solar energy collector (that is, the PV module of the claim). Therefore, interior panel 50, because it is a part of the solar energy collector, is not mounted "opposite, spaced apart from and covering substantially the entire lower surface of the PV module" This distinction provides further evidence that claim 1 is not anticipated by McArthur.

There is nothing in the art suggesting that the structure of MacArthur would have been suitable for a photovoltaic installation. In addition, there would have been no reason to modify the structure of MacArthur to add the protective panel of claim 31 because the thermal solar collector panels 30 are already covered by interior panel 50 and solar collector panels 30 would typically not be as fragile as a PV module. Accordingly, claim 31 would not have been obvious over McArthur in view of the cited art.

The **dependent claims** are direct to specific novel subfeatures of the invention and are allowable for that reason as well as by depending from novel parent claims. Specific examples are described below.

Claim 8, which recites in part "protective panels ... opposite, spaced apart from and covering substantially entire lower surfaces of the PV panels," is allowable for the same basic reasons as discussed above with regard to claim 31. That is, interior panels 50 of McArthur are integral parts of the solar energy collectors 24. If one were to remove into interior panels 50, solar energy collectors 24 would no longer function as a solar energy collector (that is, the PV module of the claim). Therefore, interior panel 50 is not mounted "opposite, spaced apart from and covering substantially the entire lower surfaces of the PV panels...."

With regard to **claims 10 and 33**, the polymer or glass back 30 of Samuelson is part of the PV modules; it is not a separate, spaced apart protective panel. There is nothing in Samuelson to suggest using an additional protective panel, much less a protective panel constructed to permit some light to pass therethrough, spaced apart from the solar cell module.

As to **claim 11**, the Nath patent discloses an architectural panel 10 having a photovoltaic generator device 12 laminated onto a generally concave central portion 14 of panel 10. Portion 14 is not spaced apart from device 12 and could not be spaced apart from device 12 because it acts as the support for the device.

The **Mori** patent has been cited as disclosing perforated back reinforcing sheet. Insofar as applicant can discern, reinforcing sheet 5 is described as being perforated in only one place in the patent. "This back reinforcing sheet is bent or perforated so that the solar-cell module can be attached by utilizing the bent or perforated part." Column 1, lines 26-28. Applicant has amended **claims 12 and 35** to clarify that the protective panels have ventilating perforations to provide ventilation for the PV panel. Support for this amendment is found at paragraph 24 of the application. The type of perforations taught by Mori would be used for attachment and not for ventilation. Therefore, there would have been no reason to modify the protective panels of claims 8 or 31 in light of Mori to arrive at panels with ventilating perforations, as opposed to, for example, panels with mounting screw holes.

CONCLUSION

It is respectfully submitted that this application is now in condition for allowance, and such action is requested. If the Examiner believes a telephone conference would aid the prosecution of this case in any way, please call the undersigned at (650) 712-0340.

The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (PWRL 1029-3).

Respectfully submitted,

Dated: 30 December 2008

/James F. Hann/

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